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ABSTRACT

To explain the migration turnaround of the 1970s, it has been suggested that the United States may be approaching an equilibrium state in the exchange of populations between metropolitan and nonmetropolitan areas. As metropolitan and nonmetropolitan areas have become more similar in population composition and industrial and socioeconomic characteristics, the people involved in interchanges between areas should be roughly equal in number and similar in characteristics. The equilibrium hypothesis was tested using county-to-county migration flows data from the 1980 census of population for Texas. Inmigrants and outmigrants in metropolitan and nonmetropolitan counties in Texas were compared in terms of their demographic, labor force and employment, and socioeconomic characteristics. Based on interchange ratios and indices of dissimilarity, the results suggest that the net impact on receiving and origin areas varies substantially from one area of the state to another. The size of flows involving nonmetropolitan areas in the State of Texas and other areas were unequal, and within-state flows and counterflows were dissimilar in the characteristics of their migrants. The results suggest the need for additional analysis of the equilibrium hypothesis and premises about the net benefits of the turnaround for nonmetropolitan areas. (JHZ)

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The Effects of Population Interchange on Metropolitan and Nonmetropolitan Counties in Texas: An Evaluation of the Equilibrium Hypothesis

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Abstract

In an attempt to explain the migration turnaround of the 1970's, Wardwell (1977) suggested that the U.S. may be approaching an equilibrium state in the exchange of populations between metropolitan and nonmetropolitan areas. As metropolitan and nonmetropolitan areas have become more similar in population composition as well as in industrial and socioeconomic characteristics, conditions necessitating interchanges of population between different areas in order to balance supply and demand dimensions should be reduced. Thus the number of persons involved in interchanges between areas should be roughly equal in volume and similar in characteristics.

In this paper the equilibrium hypothesis is tested using county-to-county migration flows data from the 1980 census of population for Texas. Specifically, this study compares immigrants and outmigrants in metropolitan and nonmetropolitan counties in Texas in terms of their demographic, labor force and employment, and socioeconomic charactersitics. If the interchange between metropolitan and nonmetropolitan areas is indeed approaching an equilibrium state, then the interchange between areas should result in similar numbers and persons with similar characteristics moving between origin and destination areas. Based on interchange ratios and indices of dissimilarity the results suggest that the net impact on receiving and origin areas varies substantially from one area of the state to another. Additional detailed analysis is recommended.

The migration turnaround has been largely examined as an empirical event. Of the few theoretical treatments of the turnaround (Campbell and Garkovich, 1984; Wardwell, 1977; Vining, 1982), the equilibrium hypothesis postulated by Wardwell (1977) and others (Vining, 1982) appears to be the most prominent perspective. In addition, recent events suggesting that the turnaround has slowed (Richter, 1985) or perhaps been reversed (Engels and Forstall, 1985), seem to provide general support for the equilibrium perspective's general premise that the urban systems of the world have largely reached a stage of equilibrium such that periodic reversals of flows from peripheral areas to core areas should be expected.

Central to the equilibrium hypothesis is the premise that once equilibrium states have been reached "Such an equilibrium may take the form of regularized streams of migration in both directions, approximately equal in total volume and roughly similar in composition," (Wardwell, 1977: 160). Thus it is maintained that the populations of metropolitan and nonmetropolitan areas are becoming increasingly similar and that the industrial and socioeconomic differentials that promoted flows of rural persons to urban centers are decreasing. From the equilibrium perspective, then, the expectation is that nonmetropolitan and metropolitan migration streams and counterstreams will become increasingly similar in volume and will be composed of migrants with similar characteristics.

Although numerous analyses have examined the characteristics of migrants to and from metropolitan areas (Bowles, 1978; Lichter et. al., 1979; Morrison and Wheeler, 1976; Tucker, 1976; Wardwell, 1977; Zuiches and Brown, 1978), most of these analyses have been based on survey results and have not utilized the more comprehensive results from the 1980 census. Thus, although these studies have been able to establish the magnitude and

general characteristics of the turnaround, they have not generally been able to fully assess the validity of the equilibrium hypothesis' premise that nonmetropolitan and metropolitan streams and counterstreams would come to be made up of persons with similar characteristics. Only data showing stream and counterstream data for counties provide the opportunity for definitive analysis of this aspect of the equilibrium hypothesis.

The purpose of this paper is to provide an evaluation of each of the two major premises of equilibrium theory--that the magnitude of streams and counterstreams between metropolitan and nonmetropolitan areas should be approximately equal in volume and that the characteristics of the migrants in the streams and counterstreams should be similar--for the State of Texas. The data set used for the analysis is the U.S. Census Bureau's County to County migration flow data showing 1975-1980 migration between each county and every other. Specifically, because of cost considerations and limitations in the data base[1] three streams of migration for the State of Texas are examined. These are the interchanges between 1) metropolitan counties and nonmetropolitan counties in Texas; 2) between nonmetropolitan counties in Texas and other counties in the nation; and 3) between metropolitan counties in Texas and other counties in the nation. These interchanges can be seen as involving somewhat different parts of the overall system and thus as providing information on the applicability of the equilibrium framework for both the overall system and for subsystems. The intent of the analysis is thus to establish whether the numbers of migrants and the characterisics of the migrants in the streams and counterstreams between metropolitan and nonmetropolitan systems in Texas (that is, the net interchange of migrants) are similar.

Methods

To assess the net effects of migration interchanges between nonmetropolitan and metropolitan origin and destination areas, two widely used measures are employed. The inmigration/outmigration interchange ratio is used to measure the volume of population interchange and the index of dissimilarity between inmigrants and outmigrants is used to assess the extent to which the characteristics of migrants in streams and counterstreams are similar (Bowles, 1978; Shryock and Siegel, 1980; Zuiches and Brown, 1978). All flows among the three categories noted above are aggregated within categories (e.g., all flows between nonmetropolitan counties and metropolitan counties within the State are summed to obtain the total nonmetro-metro intrastate flow) with interchange and indices of dissimilarity being computed for each interchange between two aggregate categories and for each interchange for persons on each characteristic. The characteristics examined include demographic characteristics (including age, sex, race, and Spanish-Origin), labor force and employment characteristics (such as labor force status and occupation and industry of employed and experienced unemployed persons) and socioeconomic characteristics (including years of education completed and personal income).

Because interchange ratios of 1 indicate identical sized flows in both directions and an index of dissimilarity of 0 indicates similar characteristics for inmigrants and outmigrants, values close to 1 and 0, respectively can be seen as providing support for the two premises of equilibrium theory. Tables 1-6 provide population interchange ratios (Panel A) and indices of dissimilarity (Panel B) for three exchanges using different characteristics. The values for the interchange between Texas

nonmetropolitan and metropolitan counties are given in the left-most column; the middle column gives values for interchanges between Texas nonmetro counties and counties in the rest of the United States; and the right column gives values for interchanges between Texas metropolitan counties and counties in the rest of the United States. The number of inmigrants for each exchange is also shown in parentheses next to the interchange ratios. Given this latter information one can reproduce the table on which interchange ratios and indices of dissimilarity are based and compute net migration.

Analysis

Evidence Related to the Volume of Flows

The overall effects of migration interchanges on population distribution are best captured by examining the interchange ratios based on all persons 5 years old and above (Table 1). A value of 1.19 indicates that for every person moving out of Texas nonmetro counties to Texas metro counties, nonmetro gained 1.19 persons from metropolitan counties. This value is smaller than the exchange between Texas nonmetro areas and the rest of the U.S. (1.44). Although Texas metro counties were losing population to their nonmetro counterparts, they nevertheless gained a large number of migrants from the rest of the nation (as indicated by an interchange ratio of 1.70).

Since interchange ratios measure only the relative (rather than the absolute) magnitude of in and out migration streams, the size of the values may not necessarily adequately characterize net effects on origin or destination areas. For example, Texas nonmetro areas gained about the same number of inmigrates from within the state (48,370) as from outside the

state (49,405), although the intrastate interchange ratio (1.19) is much smaller than the corresponding ratio for the interstate exchange (1.44). Care must thus be shown to examine both the absolute numbers as well as the ratios involved in an interchange.

Evidence Concerning Characteristics

Although the net intrastate interchange during the 1975-1980 period favored Texas nonmetro counties in terms of volume, numerical gains do not necessarily mean that migration benefited nonmetro areas. As is evident in Table 1, nonmetro areas in Texas were still losing large numbers of younger persons (20-24 years of age) to metro counties despite gains of persons in nearly all other age groups. The largest net gains were in the oldest age categories. Also, although nonmetro Texas gained persons of all ages from the rest of the nation, such gains tended to be concentrated in older age groups with the number of young adults being underrepresented. Together, both interstate and intrastate interchanges tended to have an aging effect on the nonmetro population. In contrast, in metro counties in Texas the net rate of interchange with the rest of the nation was nearly equal for all age groups thus having little affect on the age structures of either origins or destination. An examination of the indices of dissimilarity reveals similar patterns among the three exchanges. The intrastate exchange involved streams of migrants which were most dissimilar in age composition, whereas the metro/outside the state exchanges had the most similar age composition.

There were no significant differences in sex composition in any of the exchanges. In terms of race and ethnicity differences, it appears that whites and blacks tended to move in opposite directions, so do Spanish and non-spanish (Table 2) with nonmetropolitan areas sharing a net loss of both

Black and Spanish-origin persons. As for age composition, indices of dissimilarity indicated that Texas metro/outside the state interchanges were more likely to involve persons with similar racial and ethnic composition than the exchanges involving other areas.

In and out migrants to Texas nonmetro counties also differ significantly in labor force status (Table 3). An examination of intrastate interchanges involving persons with different labor force statuses indicates that nonmetro counties gained more people who were not in the labor force, and as a whole, nonmetro counties tended to gain unemployed persons and lose employed persons.

The data in Table 4 indicate that the employed persons moving to Texas nonmetro counties from metro counties were predominantly employed in the agricultural and construction industries. Mining and construction industries in nonmetro counties also showed a net gain from the rest of the nation. Interestingly, nonmetro counties in Texas were either losing (to Texas metro counties), or were not getting their share (from outside the state) of manufacturing workers despite widespread speculation that the turnaround was made possible by nonmetro industrialization in Texas. Texas metro counties showed a net gain of workers employed in all industries except agriculture from the rest of the nation. These relative gains were particularly noteworthy in industries such as mining, construction, wholesale, and finance.

Patterns for experienced unemployed persons showed few differences by area. This is evident in the fact that total interchange ratios are close to 1 for nearly all areas. In addition, although larger values of indices of dissimilarity indicate the existence of noticeable differences in industrial composition in the streams involving unemployed workers, the

small number of persons involved in these streams suggests that the overall impact of such differences will be small for both origins and destinations.

Differences in educational characteristics of persons leaving Texas nonmetro areas and those coming to such areas also appear to have had a negative effect on the educational levels (Table 5). Nonmetropolitan counties tended to have a net gain of persons with lower levels of education from all origins and a net loss of persons with at least some college education to Texas metro counties. On the other hand, Texas metro counties showed a net gain of highly educated persons from both within the state and from outside the state. Overall, the dissimilarity in educational composition was more marked for exchanges within the state than for those involving other states.

Income differentials show a similar pattern as those for education. Inmigrants to Texas and outmigrants from Texas were quite similar in their income distribution. However, the intrastate exchange between metro and nonmetro counties in Texas showed a bimodal pattern, with metro destinations being preferred more by middle income persons, whereas nonmetro counties attracted either the very poor or the relatively more affluent.

Information on the occupations of persons involved in interchanges between metro and nonmetro counties in Texas indicate that nonmetro counties exported technical and administrative support workers, and imported farm and transportation workers (Table 6). Texas nonmetro counties also gained large numbers of precision workers from other states. Persons participating in Texas metro/outside the state interchanges were relatively similar in occupational composition, with the exception of the

farming category. An interchange value of 0.61 indicates that for every 100 farm workers leaving Texas metro counties to migrate to other states, only 61 came from other states to Texas.

The occupational characteristics of streams involving experienced unemployed workers were quite different for different interchanges, as reflected by relatively large indices of dissimilarity. This suggests that certain functional specialties were still prevalent in certain areas and unemployed persons were likely to migrate to areas where they believed job opportunities reflecting their skills existed.

Conclusions

The data presented in this paper suggest that neither of the premises of equilibrium theory--that flows involving metropolitan and nonmetropolitan areas are likely to be roughly equivalent in size or that they are likely to involve migrants with similar characteristics--can be accepted unconditionally. Rather the size of flows involving nonmetropolitan areas in the State of Texas and other areas are not equal and within state flows and counterflows between metropolitan and nonmetropolitan areas are not similar in the characteristics of their migrants. Only for those flows involving Texas and other states is there evidence of similarities in the characteristics of migrants involved in the flows. Although analyses of the equilibrium hypothesis should perhaps be completed only at the total national systems level, and additional analyses must certainly be completed for other areas before any definitive statements can be made regarding the validity of the equilibrium hypothesis, the results here have clear implications both for the assessment of the impacts of the nonmetropolitan turnaround for

nonmetropolitan areas and for theoretical attempts to explain the turnaround.

For nonmetropolitan areas the results of this analysis suggest that the net gain from the turnaround consisted primarily of older migrants, migrants with lower levels of education who were more likely to be unemployed, persons with lower levels of income (although nonmetropolitan areas gained some relatively wealthy people they were small in numbers and their overall effect on income levels much lower than that provided by the relatively larger proportion of middle income persons going to metropolitan areas), and of persons engaged primarily in extractive and construction industries. The net gain in persons employed in service industries and in manufacturing was relatively limited. Although another analysis (Murdock et. al., 1986) suggests that migrants to nonmetropolitan areas are likely to have higher socioeconomic and labor force based measures than nonmigrants in such areas, the results of this analysis suggest that the nonmetropolitan turnaround may not have been as beneficial to nonmetropolitan areas as is sometimes supposed. Rather the net gain of the turnaround in human capital terms appears to have been nullified by a continuation of the historic patterns of relatively heavy outmigration of young, well-educated adults. Such findings suggest that the effects of the turnaround on nonmetropolitan areas, beyond those involving merely increases in the numbers of persons in such areas, require more complete analysis.

For the development of theoretical explanations of the turnaround, the results of this analysis suggest that existing theoretical specifications require additional supplementation. The equilibrium hypothesis may, in fact, have validity at the total national or international systems level

but within substate systems, additional concepts should perhaps be brought to bear to provide a more complete explanation. For example, the equilibrium concept though clearly rooted in the framework of human ecology (Hawley, 1950; 1971; Micklin and Choldin, 1984) utilizes only a few of the key concepts of this perspective. Such concepts as differentials in differentiation and dominance between different parts of ecosystems and for different types of ecosystems should be taken into account. It seems possible to suggest, for example, that given the relative proximity and differentials in dominance between nonmetropolitan and metropolitan areas within a state the net flow between such areas is likely to be one that favors the more dominant urban area. In like manner, for states such as Texas that showed a high level of ecosystem expansion during the 1970s, the differentials in flows with other states should not be expected to be similar. In sum, the use of a more complete version of the ecological perspective from which the equilibrium hypothesis is derived would appear to be beneficial to explaining the continuing differentials in the interchanges between migrants in nonmetropolitan and metropolitan areas. Adequate explanations of the turnaround will clearly require more complex explanations than those that have been provided to date and attempts to take into account areal variability in net interchange differences will need to be included in these frameworks.

The analysis reported here, is but an initial attempt to examine equilibrium and related concepts for describing the nonmetropolitan turnaround of the 1970s. Even in its preliminary form, however, the results suggest that such concepts as those entailed in the equilibrium hypothesis and premises about the net benefits of the turnaround for nonmetropolitan areas require careful and critical analysis.

Notes

[1]Although the availability of such data on tapes allows researchers to study migration flows at low levels of aggregation, the costs associated with the processing of such data necessitated limiting our analysis. In this study, the county-to-county migration flow data from the 1980 census for Texas counties during the period of 1975-80 are aggregated for metropolitan and nonmetropolitan counties allowing for both intrastate as well as interstate interchanges. The costs of procuring and processing data limited our study to Texas although a full evaluation of the equilibrium hypothesis clearly requires a broader analyses. Furthermore, although we intended to differentiate interchanges involving counties in other states into metro and nonmetro counties (as is done for Texas counties), the fact that interstate flows between counties involving less than 100 migrants are not reported in the census data made such a differentiation impossible.

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Table 1: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Age and Sex, 1975-80

	Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
			A. Interchange Ratios (Inmigrants in Parentheses)			
Total Population	1.19	(298,765)	1.44	(160,736)	1.70	(1,275,501)
Age						
5- 9	1.43	(30,298)	1.40	(17,468)	1.47	(123,205)
10-14	1.64	(26,787)	1.45	(14,916)	1.61	(103,229)
15-19	1.12	(30,237)	1.44	(18,162)	1.82	(126,664)
20-24	0.64	(39,262)	1.16	(21,325)	1.99	(223,522)
25-29	0.98	(38,358)	1.19	(19,733)	1.66	(211,617)
30-34	1.41	(30,853)	1.35	(15,872)	1.55	(155,560)
35-39	1.46	(19,994)	1.60	(12,008)	1.64	(100,757)
40-44	1.47	(13,149)	1.66	(8,248)	1.68	(63,297)
45-49	1.65	(12,212)	1.68	(6,651)	1.77	(45,387)
50-54	1.98	(11,863)	1.80	(5,749)	1.73	(34,338)
55-59	1.92	(11,802)	2.16	(5,479)	1.74	(28,119)
60-64	2.20	(11,883)	2.63	(5,137)	1.71	(19,073)
65+	1.37	(22,067)	1.95	(9,987)	1.89	(40,733)
Sex						
Male	1.24	(152,252)	1.45	(83,870)	1.69	(670,065)
Female	1.15	(146,513)	1.43	(76,866)	1.71	(605,436)
			B. Indices of Dissimilarity			
Age	14.77		6.91		3.85	
Sex	1.98		0.44		0.21	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.

(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states

(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states

Table 2: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Race and Ethnicity, 1975-80

	Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
			A. Interchange Ratios (Inmigrants in Parentheses)			
Total	1.19	(298,765)	1.44	(160,736)	1.70	(1,275,501)
Race						
White	1.27	(268,171)	1.53	(142,984)	1.73	(1,102,374)
Black	0.75	(17,152)	1.20	(8,137)	1.77	(106,664)
American Indian	1.48	(1,257)	0.82	(1,242)	1.16	(7,639)
Asian, etc.	0.83	(441)	1.19	(1,439)	2.14	(22,228)
Other	0.75	(11,744)	0.83	(6,934)	0.99	(36,596)
Ethnicity						
Spanish	0.71	(54,935)	0.81	(33,600)	0.99	(175,555)
Non-Spanish	1.41	(243,830)	1.82	(127,136)	1.92	(1,099,946)
			B. Indices of Dissimilarity			
Race	5.82		5.02		2.32	
Ethnicity	12.62		16.33		9.93	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.

(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states

(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states

Table 3: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Labor Force Status, 1975–80

	Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
			A. Interchange Ratios (Inmigrants in Parentheses)			
Labor Force Status						
In Civilian Labor Force						
Employed	0.94	(126,193)	1.51	(66,889)	1.96	(648,495)
Unemployed	1.06	(6,001)	1.11	(4,318)	1.07	(30,505)
In Armed Forces	0.51	(957)	0.50	(4,252)	1.61	(92,682)
Not in Labor Force	1.52	(103,292)	1.67	(49,663)	1.49	(257,959)
Total	1.13	(236,443)	1.45	(125,122)	1.74	(1,029,641)
			B. Indices of Dissimilarity			
	11.37		7.48		6.92	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.
(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states
(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states

Table 4: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Industry of Employment, 1975-80

Industry	Employed Persons				Experienced Unemployed Persons					
	Nonmetropolitan Counties			Metropolitan Counties	Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)	All Counties Different State (3)	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
	A. Interchange Ratios (Inmigrants in Parentheses)									
Agriculture, etc.	2.35	(6,514)	1.39	(3,488) 0.61 (4,744)	1.32	(202)	0.62	(165)	0.59	(601)
Mining	1.02	(6,950)	1.93	(5,848) 2.28 (24,132)	1.01	(185)	2.28	(306)	1.13	(370)
Construction	1.12	(12,758)	2.40	(7,673) 2.58 (55,278)	1.09	(914)	1.30	(574)	1.10	(3,941)
Manufacturing	0.87	(18,675)	1.40	(10,611) 1.97 (121,106)	1.42	(1,152)	0.86	(678)	0.71	(4,022)
Transportation, etc.	0.90	(9,140)	1.50	(4,468) 2.17 (47,989)	1.01	(280)	0.97	(174)	0.87	(1,348)
Wholesale	0.68	(4,637)	1.07	(2,069) 2.52 (37,545)	0.50	(112)	0.86	(95)	1.36	(1,119)
Retail	1.00	(21,019)	1.56	(10,773) 2.08 (108,299)	0.96	(1,183)	1.64	(959)	1.34	(7,131)
Finance, etc.	0.67	(5,444)	1.16	(2,199) 2.23 (44,289)	0.67	(178)	0.85	(85)	1.37	(1,245)
Business & Rep.	0.78	(4,712)	1.26	(2,453) 2.17 (37,978)	1.63	(257)	1.03	(151)	1.39	(1,757)
Personal Service	0.93	(3,355)	1.41	(2,009) 1.69 (15,770)	0.78	(184)	1.27	(184)	0.88	(846)
Recreation Service	0.72	(735)	1.16	(363) 1.38 (6,502)	9.86	(69)	0.66	(33)	0.80	(405)
Professional Service	0.89	(26,119)	1.46	(12,288) 1.70 (121,892)	0.91	(721)	1.34	(534)	1.26	(3,887)
Public Administration	1.01	(6,135)	1.16	(2,647) 1.28 (22,971)	1.36	(211)	1.05	(118)	0.91	(1,097)
Total	0.94	(126,193)	1.51	(66,889) 1.96 (648,495)	1.06	(5,648)	1.17	(4,056)	1.06	(27,769)
	B. Indices of Dissimilarity									
	6.57		6.72	7.09	9.85		13.85		11.60	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.

(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states

(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states

Table 5: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Education and Income, 1975-80

	Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
			A. Interchange Ratios (Inmigrants in Parentheses)			
Education						
Elementary	1.30	(30,438)	1.52	(14,857)	1.44	(54,696)
1-3 Years, High School	1.51	(43,904)	1.67	(23,009)	1.59	(107,954)
4 Years High School	1.15	(73,483)	1.44	(43,794)	1.72	(337,879)
1-3 Years of College	0.89	(45,809)	1.42	(21,253)	1.85	(233,199)
4 Years of College	0.94	(20,019)	1.17	(8,747)	2.02	(144,906)
5 Years of College	0.89	(12,444)	1.17	(6,467)	1.70	(110,366)
Total	1.11	(226,097)	1.44	(118,127)	1.75	(989,000)
Income						
Without income	1.68	(44,156)	1.61	(22,854)	1.45	(125,407)
$1- $1,999	1.13	(33,276)	1.55	(17,479)	1.63	(114,156)
$2,000- $4,999	1.08	(39,787)	1.39	(20,332)	1.69	(147,107)
$5,000- $7,499	1.01	(25,887)	1.17	(14,857)	1.69	(128,902)
$7,500- $9,999	0.90	(19,842)	1.31	(10,573)	1.81	(100,372)
$10,000-$14,999	0.95	(29,877)	1.50	(15,775)	1.95	(155,437)
$15,000-$24,999	1.09	(30,253)	1.55	(15,820)	1.95	(156,389)
$25,000-$49,999	1.28	(11,432)	1.45	(6,203)	1.86	(86,125)
$50,000 or more	1.45	(1,933)	1.92	(1,229)	1.73	(15,746)
Total	1.13	(236,443)	1.45	(125,122)	1.74	(1,029,641)
			B. Indices of Dissimilarity			
Education	8.05		3.32		3.25	
Income	6.95		4.31		4.07	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.

(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states

(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states

Table 6: Interchange Ratios and Indices of Dissimilarity for Metropolitan and Nonmetropolitan Texas Counties, by Occupation, 1975-80

Industry	Employed Persons						Experienced Unemployed Persons					
	Nonmetropolitan Counties				Metropolitan Counties		Nonmetropolitan Counties				Metropolitan Counties	
	Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)		Metropolitan Same State (1)		All Counties Different State (2)		All Counties Different State (3)	
	A. Interchange Ratios (Inmigrants in Parentheses)											
Executives, etc.	0.93	(10,871)	1.36	(5,547)	2.13	(95,042)	0.67	(167)	1.45	(204)	1.56	(2,029)
Professional	1.02	(18,113)	1.44	(7,842)	1.81	(106,128)	0.93	(307)	0.69	(121)	1.07	(1,840)
Technical	0.55	(3,081)	1.44	(1,972)	2.10	(31,445)	0.76	(68)	4.22	(97)	0.97	(585)
Sales	0.92	(12,895)	1.48	(5,958)	2.23	(77,336)	0.90	(572)	1.55	(499)	1.51	(3,800)
Administrator Support	0.64	(16,477)	1.16	(7,590)	2.15	(110,364)	0.87	(784)	1.59	(521)	1.28	(4,480)
Service	0.93	(13,069)	1.56	(8,054)	1.68	(61,544)	1.06	(898)	1.29	(835)	1.13	(4,955)
Farming, etc.	2.33	(6,101)	1.32	(3,143)	0.61	(4,229)	1.40	(218)	0.63	(144)	0.65	(678)
Precision, etc.	1.11	(22,160)	1.91	(13,316)	2.17	(84,441)	1.37	(945)	1.37	(751)	0.99	(3,698)
Operative, etc.	0.93	(8,986)	1.32	(4,868)	1.59	(32,243)	1.56	(858)	0.75	(336)	0.59	(1,930)
Transportation, etc.	1.26	(8,563)	1.89	(4,946)	2.06	(23,184)	1.21	(281)	0.72	(224)	0.75	(1,147)
Handlers, etc.	0.89	(5,877)	1.73	(3,653)	1.81	(22,539)	0.85	(550)	0.96	(324)	1.02	(2,627)
Total	0.94	(126,193)	1.51	(66,889)	1.96	(648,495)	1.06	(5,648)	1.17	(4,056)	1.06	(27,769)
	B. Indices of Dissimilarity											
	8.44		6.83		5.89		10.16		15.13		10.42	

(1) Inmigrants to nometropolitan counties in Texas from metropolitan Texas counties in Texas/Outmigrants from nonmetropolitan counties in Texas to metropolitan Texas counties in Texas.
(2) Inmigrants to nonmetropolitan counties in Texas from all counties in other states/Outmigrants from nonmetropolitan counties in Texas to all counties in other states
(3) Inmigrants to metropolitan counties in Texas from all counties in other states/Outmigrants from metropolitan counties in Texas to all counties in other states